

KIC 009838804

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
009838804-01	OBS	3028.01	1.332565	132.041518	162.7	2.971	13.6	15.9	0.82	5547	1.06	1078.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009838804-01	OBS	FP	0.00	0	0	0	1	CENT_FEW_DIFFS—EPHEM_MATCH

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009838804-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
009838804-01	9838804	BR-Cyg-pri	9899416	1:1	763.2	191	3	10.03	15.99	4103.50	Col-Anomaly	0	0.06	0.54

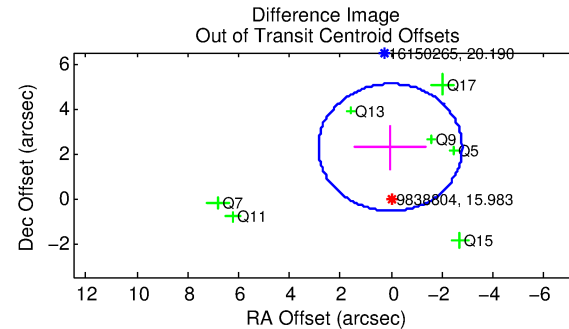
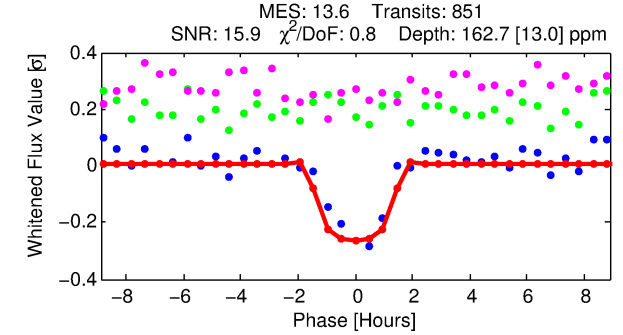
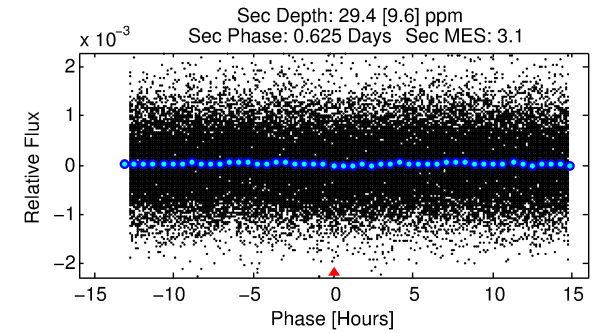
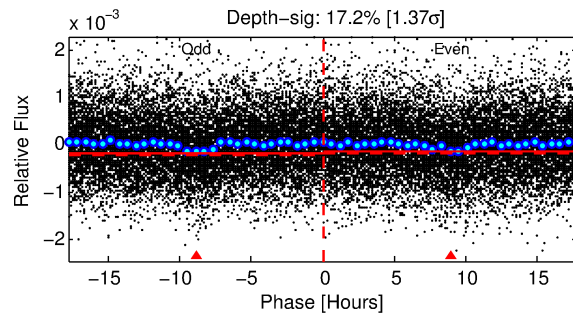
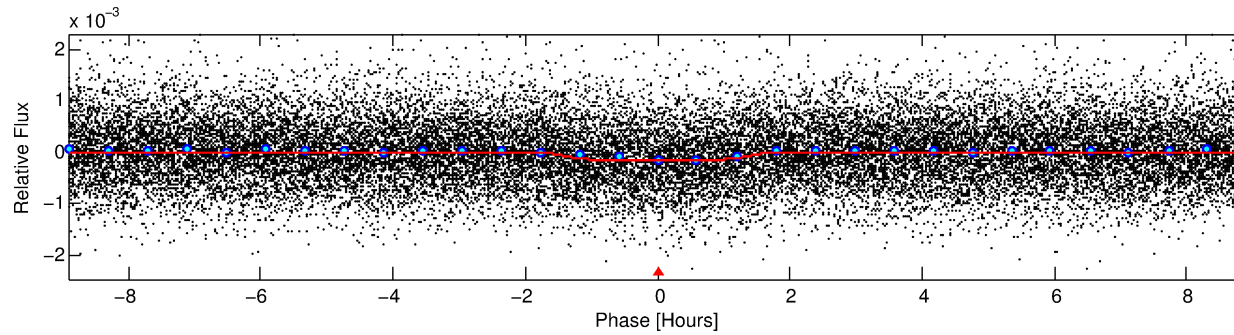
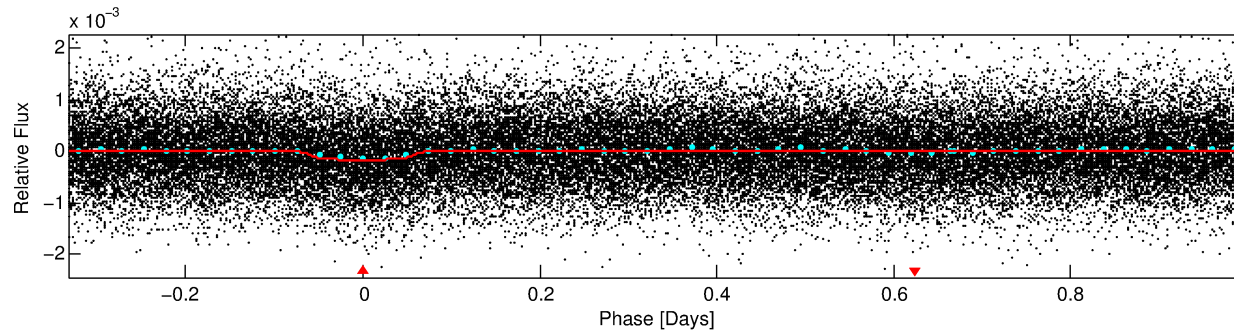
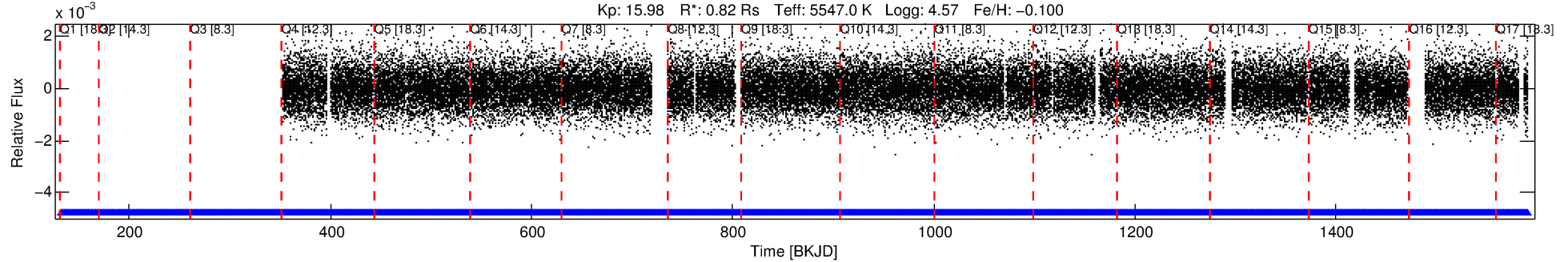
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant σ_P < 5.0 and σ_T < 5.0. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 9838804 Candidate: 1 of 1 Period: 1.333 d

KOI: K03028.01 Corr: 0.973

Kp: 15.98 R*: 0.82 Rs Teff: 5547.0 K Logg: 4.57 Fe/H: -0.100



DV Fit Results:

Period = 1.33256 [0.00001] d
Epoch = 132.0415 [0.0027] BKJD
Rp/R* = 0.0119 [0.0088]
a/R* = 3.14 [8.61]
b = 0.47 [5.05]
Seff = 1078.33 [356.24]
Teq = 1461 [121] K
Rp = 1.06 [0.83] Re
a = 0.0230 [0.0047] AU
Ag = 7.58 [11.70] [0.56σ]
Teffp = 3748 [1426] K [1.60σ]

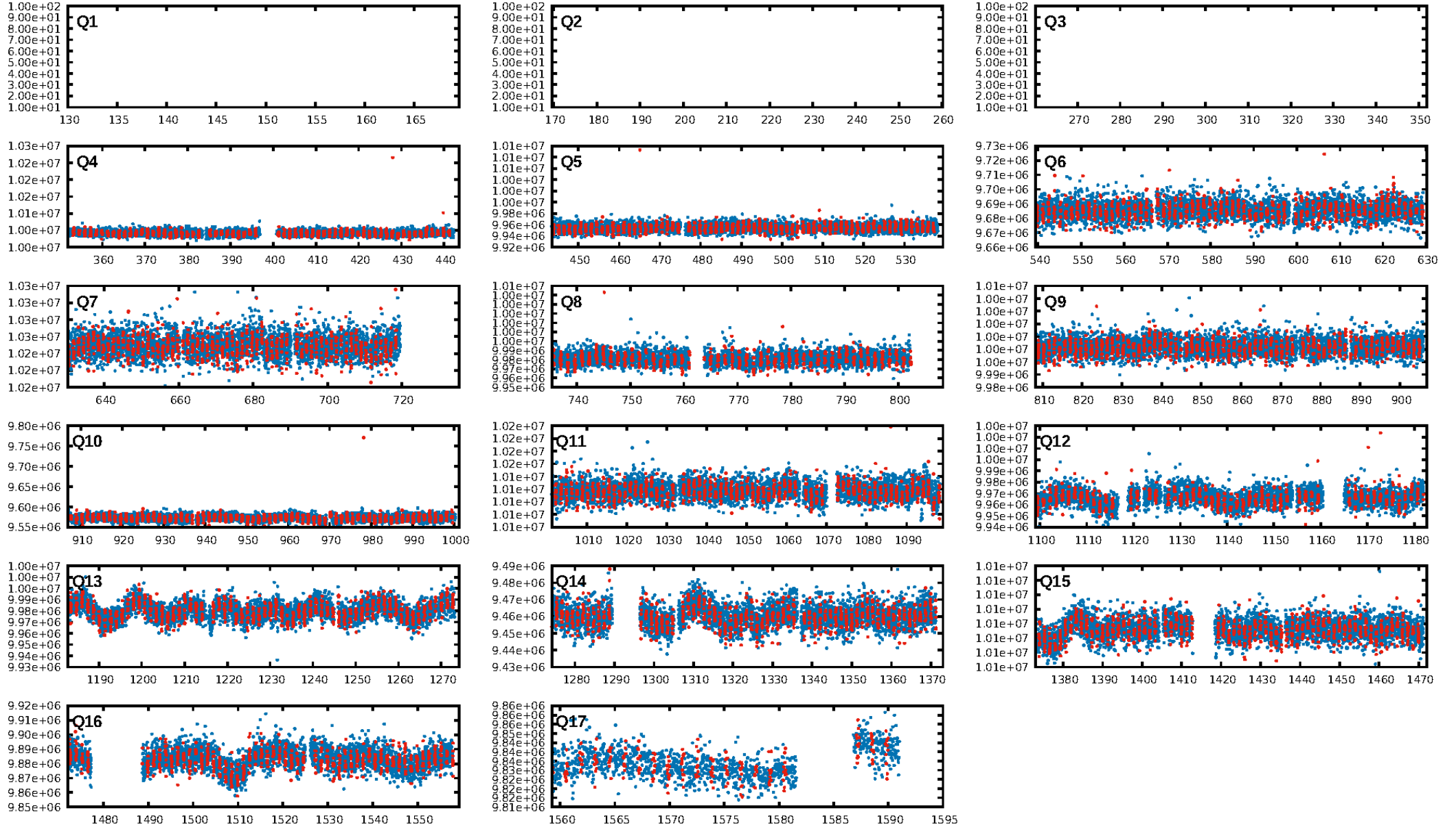
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.09e-41
RollingBand-fgt: 1.00 [831/831]
GhostDiagnostic-chr: 0.4151
Centroid-sig: 0.0%
Centroid-so: 2.866 arcsec [3.46σ]
OotOffset-rm: 2.265 arcsec [2.40σ]
KicOffset-rm: 2.327 arcsec [2.74σ]
OotOffset-st: 0/3/0/4 [7]
KicOffset-st: 0/3/0/4 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 1.00 [14/14]

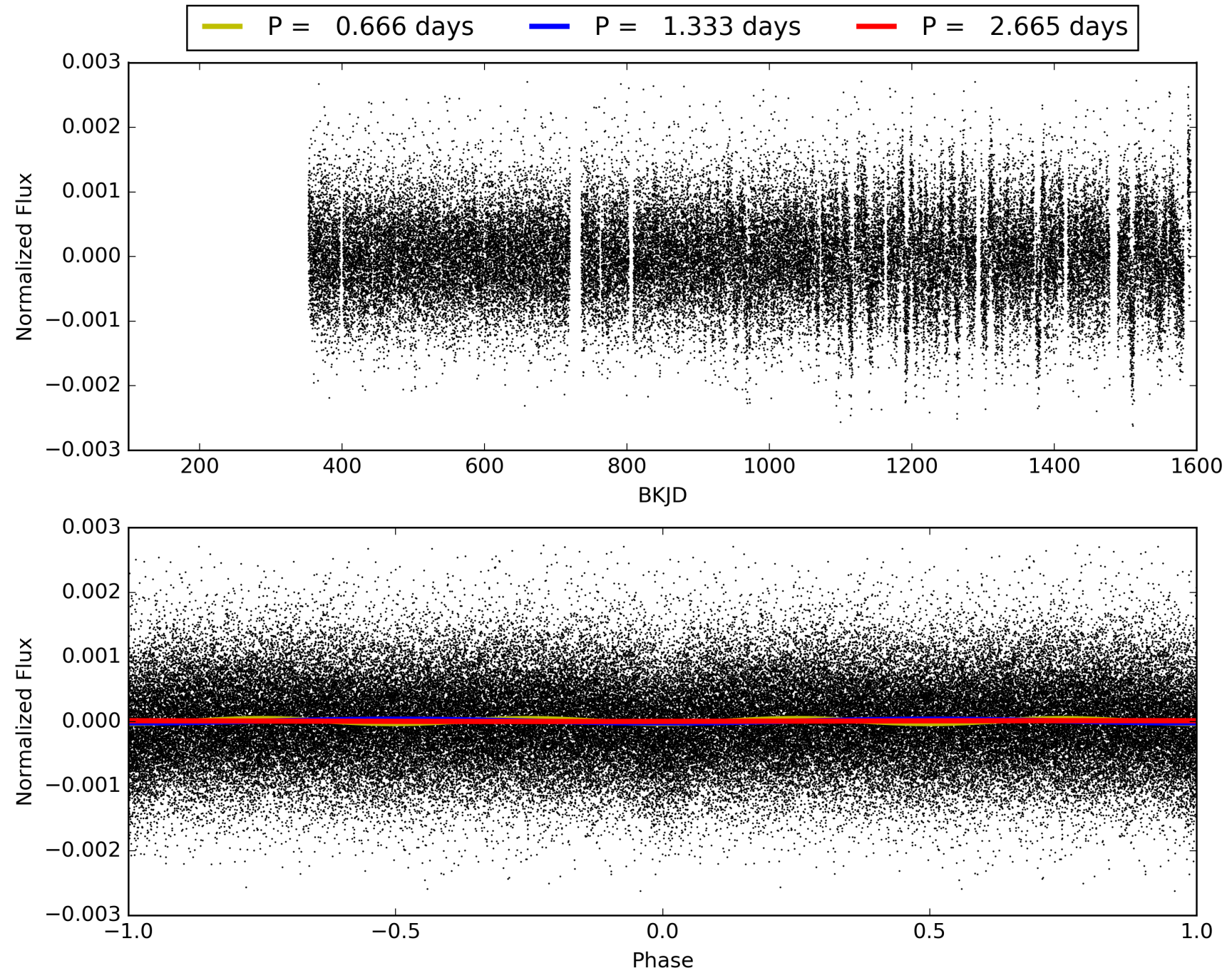
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:09:28 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009838804-01, PDC Light Curves

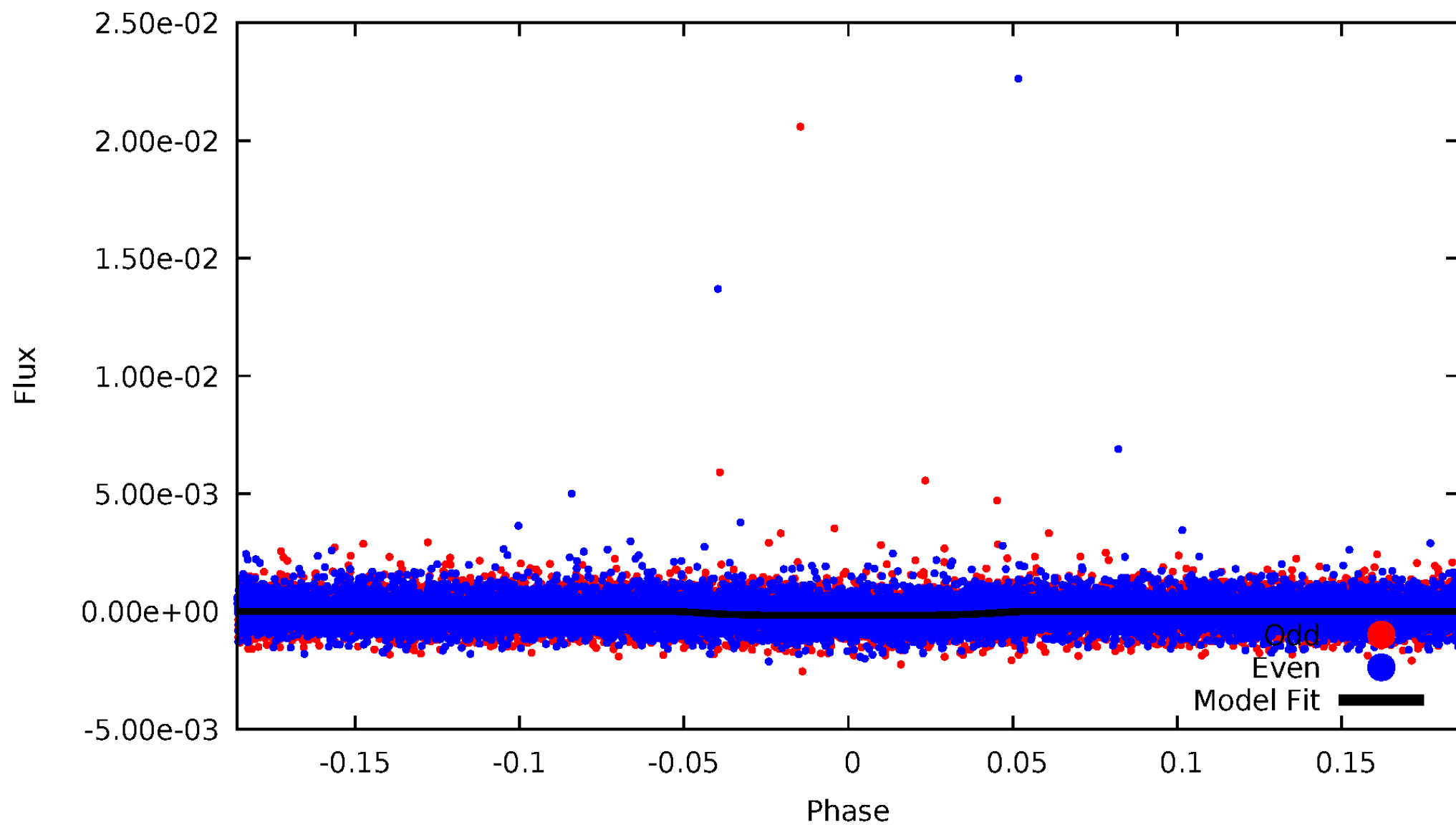


TCE 009838804-01



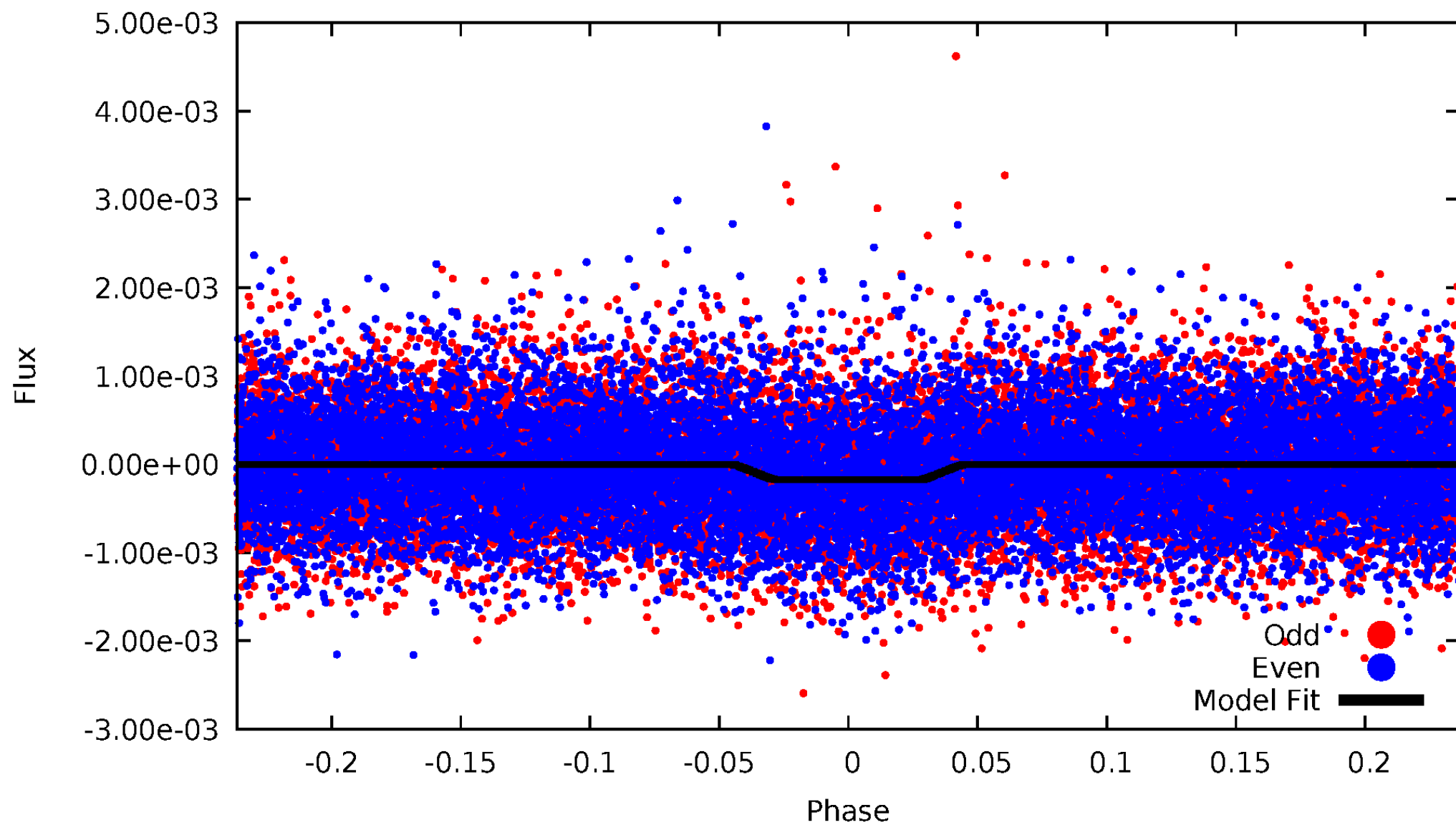
DV Odd/Even

TCE 009838804-01



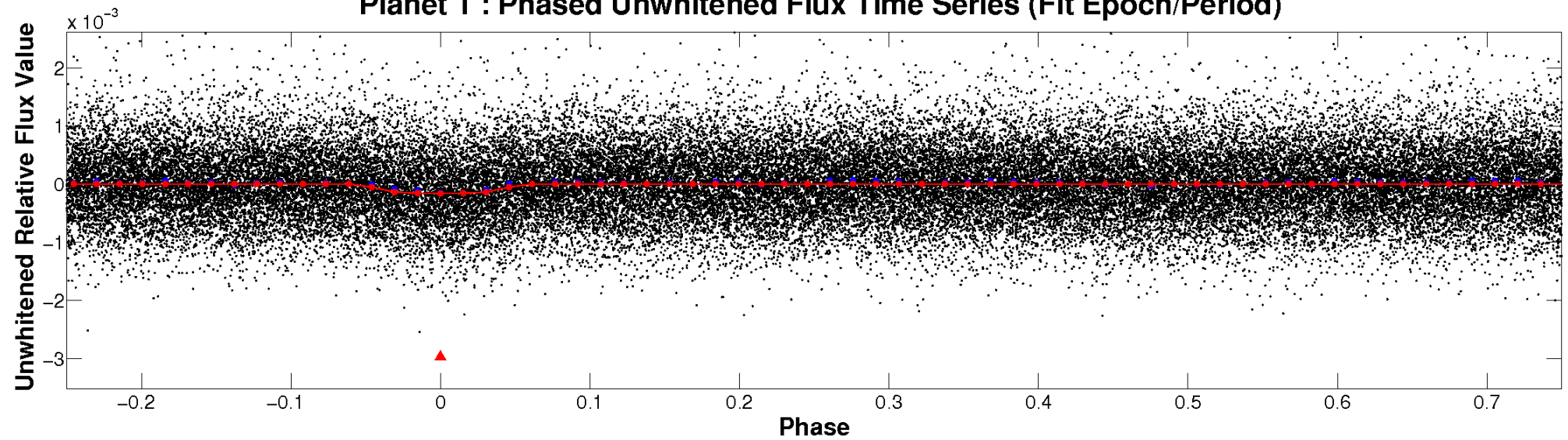
ALT Odd/Even

TCE 009838804-01

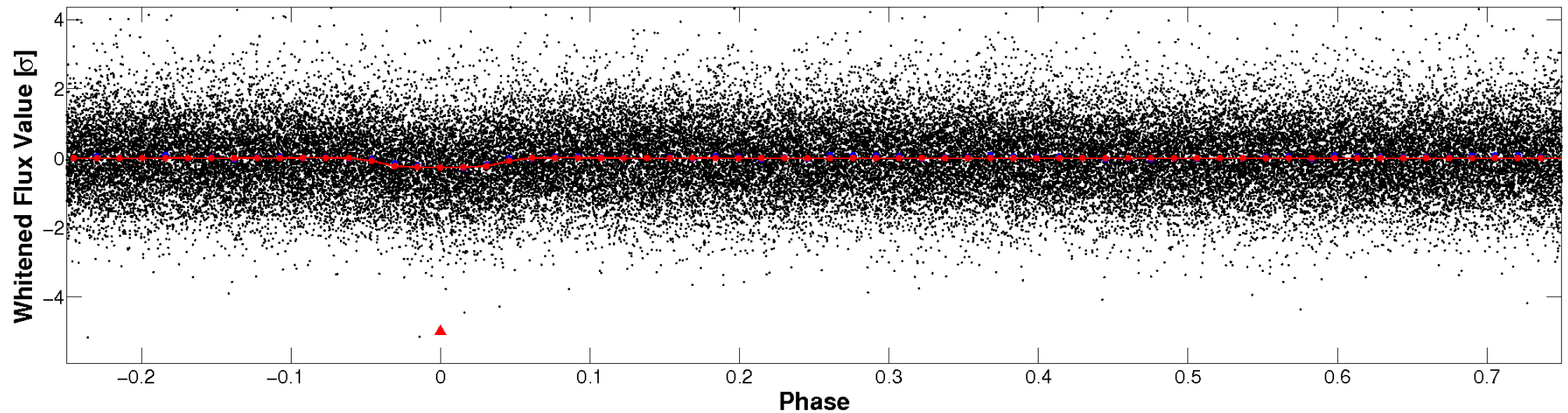


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

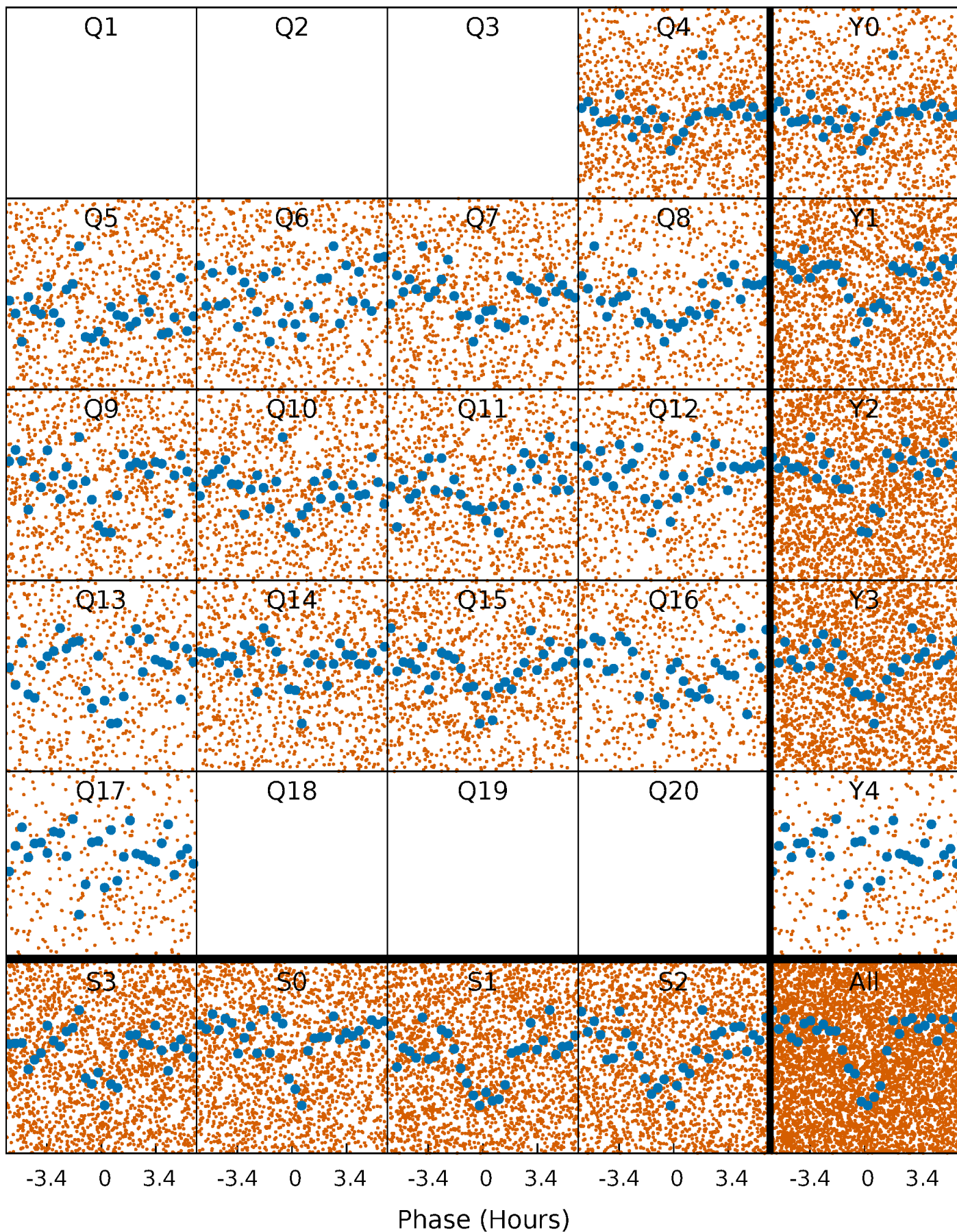


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



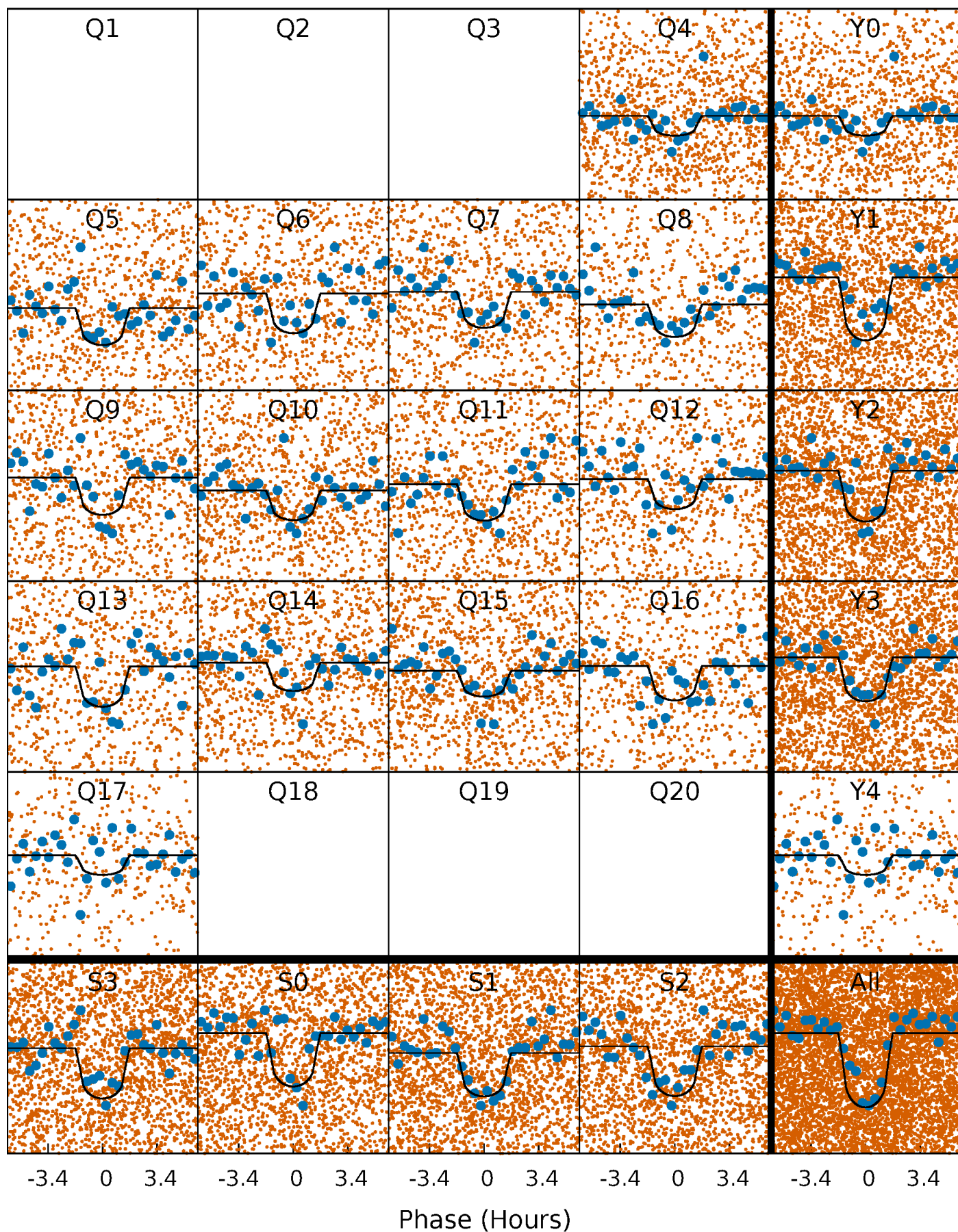
PDC Quarter-Phased Transit Curves

TCE 009838804-01 P= 1.332565 Days $T_0=132.041518$ (BKJD)



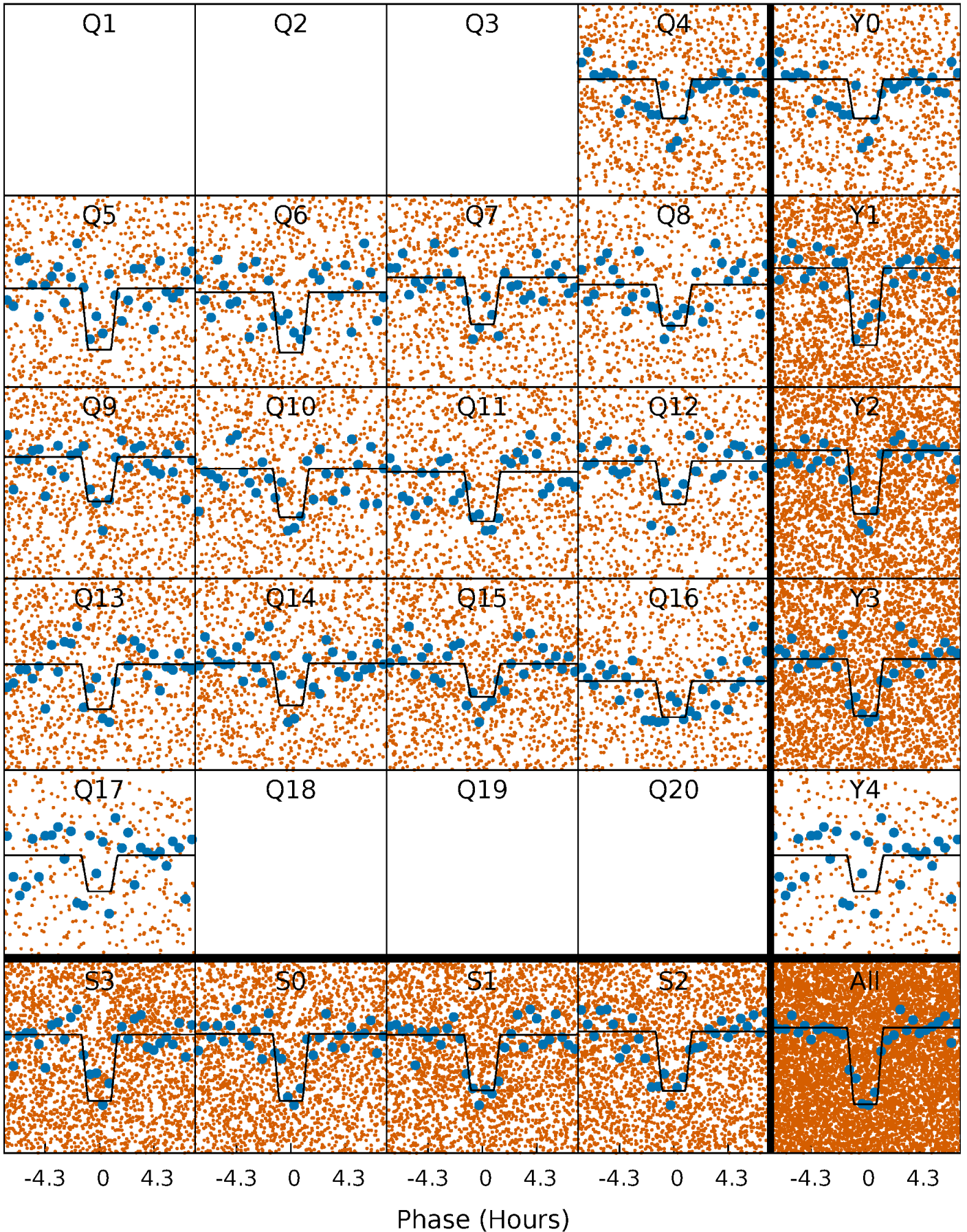
DV Quarter-Phased Transit Curves

TCE 009838804-01 P= 1.332565 Days $T_0=132.041518$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

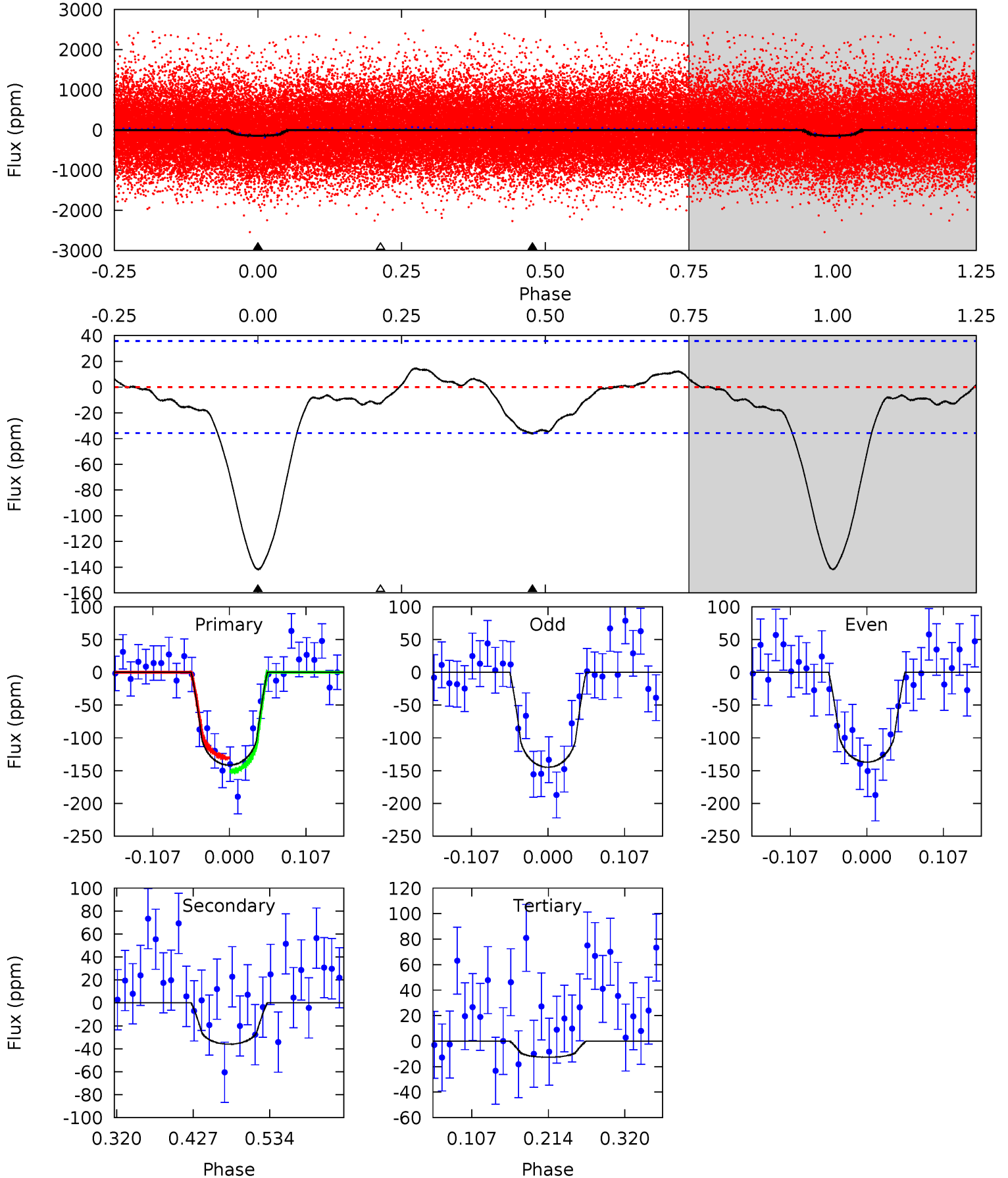
TCE 009838804-01 P= 1.332579 Days $T_0=132.035037$ (BKJD)



DV Model-Shift Uniqueness Test

009838804-01, P = 1.332565 Days, E = 132.041518 Days

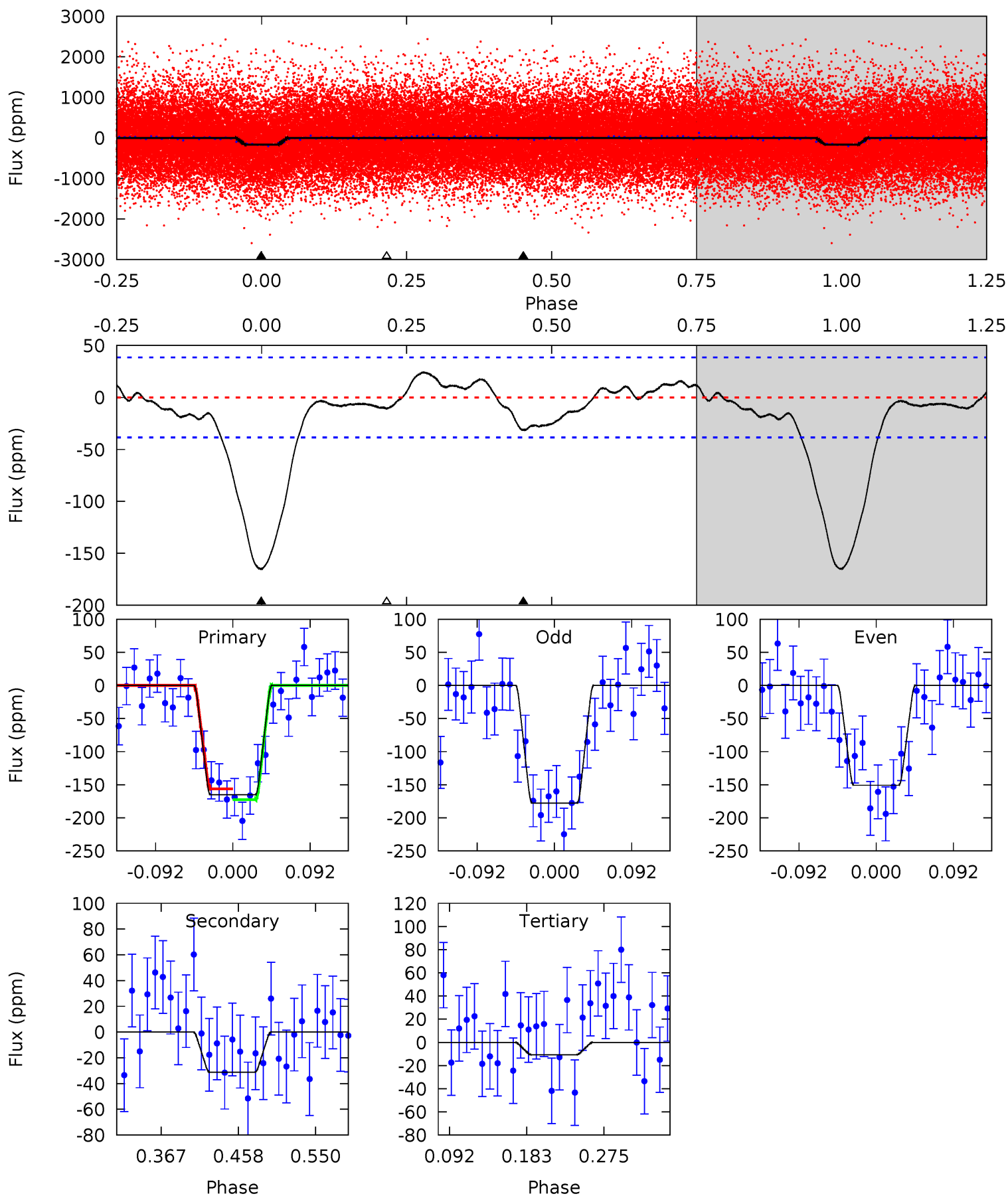
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	4.58	1.61	0	4.55	1.61	1.09	16.4	18.0	2.97	4.58	0.50	0.89	0.09	1.34



Alt Model-Shift Uniqueness Test

009838804-01, P = 1.332579 Days, E = 132.035037 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	3.71	1.26	0	4.58	1.69	1.30	18.3	19.6	2.45	3.71	1.59	0.95	0.13	0.97



Stellar Parameters For KIC 009838804

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5547^{+182}_{-199}	$4.571^{+0.038}_{-0.162}$	$-0.100^{+0.300}_{-0.300}$	$0.820^{+0.201}_{-0.067}$	$0.918^{+0.081}_{-0.112}$	$2.348^{+0.483}_{-1.004}$
	+3%/-4%	+1%/-4%	+300%/-300%	+25%/-8%	+9%/-12%	+21%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009838804-01 / KOI 3028.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-36 ± 8	$1.14^{+0.84}_{-0.68}$	2083^{+125}_{-96}	4082^{+1871}_{-732}	$7.426^{+36.011}_{-4.823}$
Alt.	-31 ± 8	$1.26^{+0.86}_{-0.70}$	2082^{+123}_{-101}	3826^{+1557}_{-657}	$5.186^{+23.455}_{-3.325}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

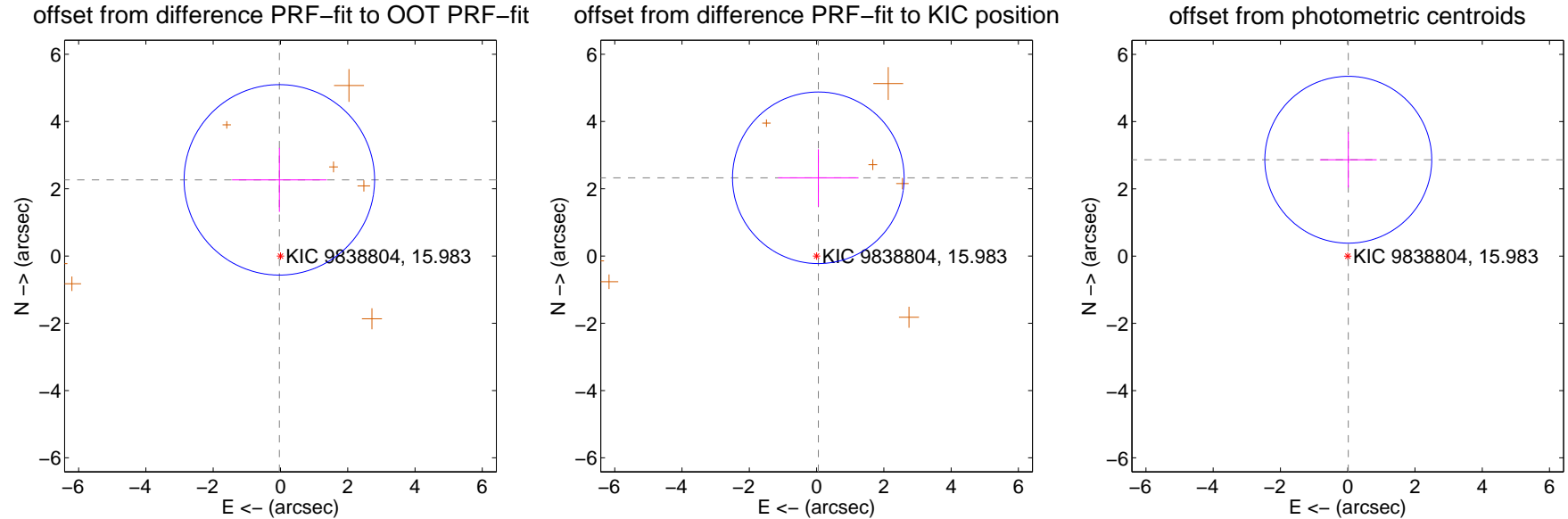
DV Centroid Data

Supplemental centroid analysis for 009838804-01. Kepler magnitude: 15.98. Transit SNR 15.91

There are 0 quarters with good PRF difference image offsets

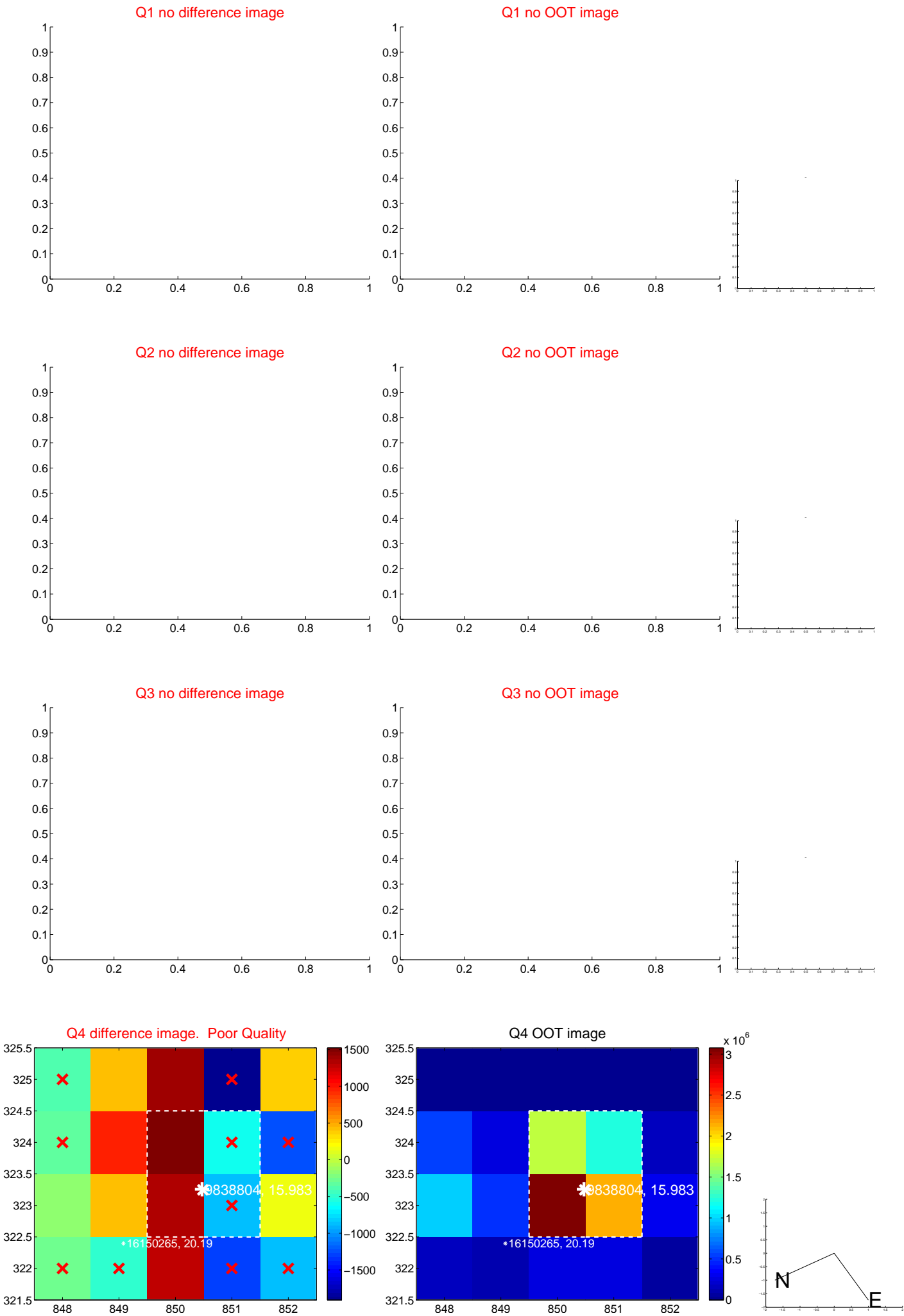
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.265 ± 0.944	2.40	0.033 ± 1.407	2.265 ± 0.951
PRF-fit source offset from KIC position	2.327 ± 0.850	2.74	-0.052 ± 1.195	2.326 ± 0.850
photometric centroid source offset	2.87 ± 0.83	3.46	-0.02 ± 0.84	2.87 ± 0.83

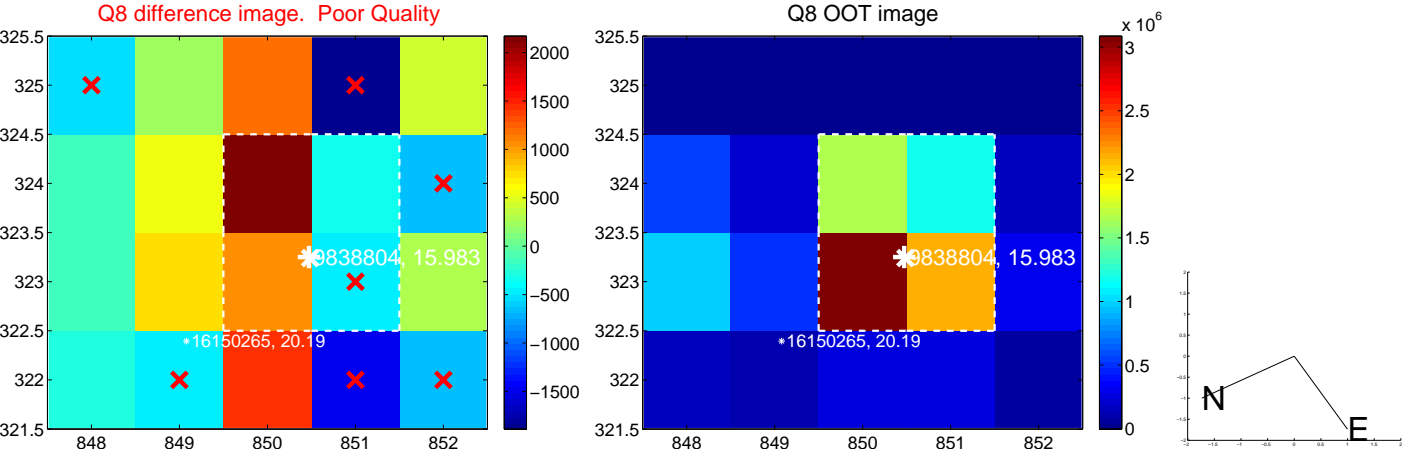
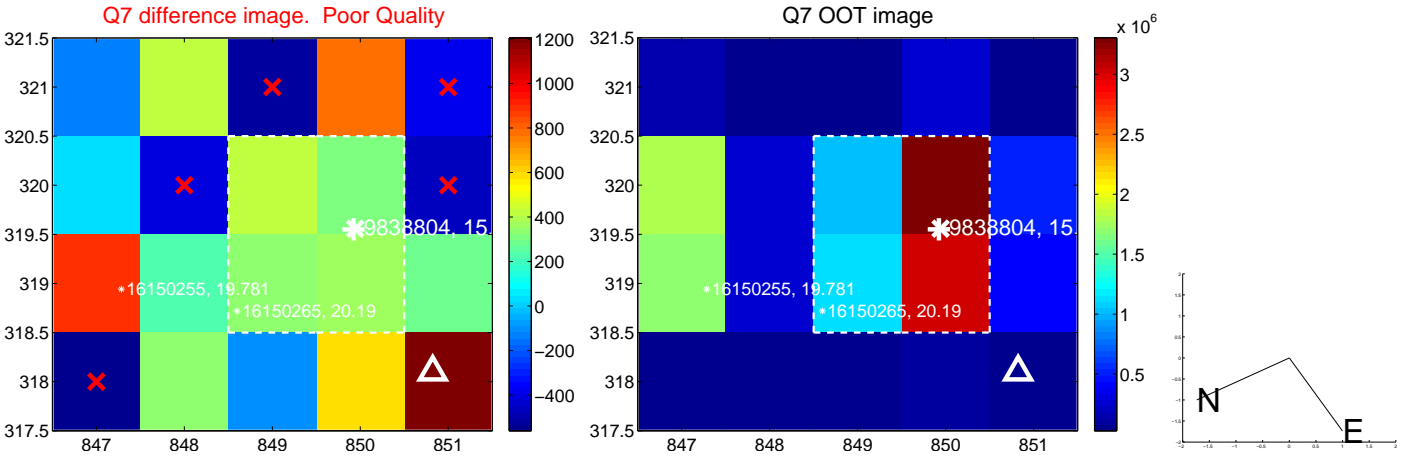
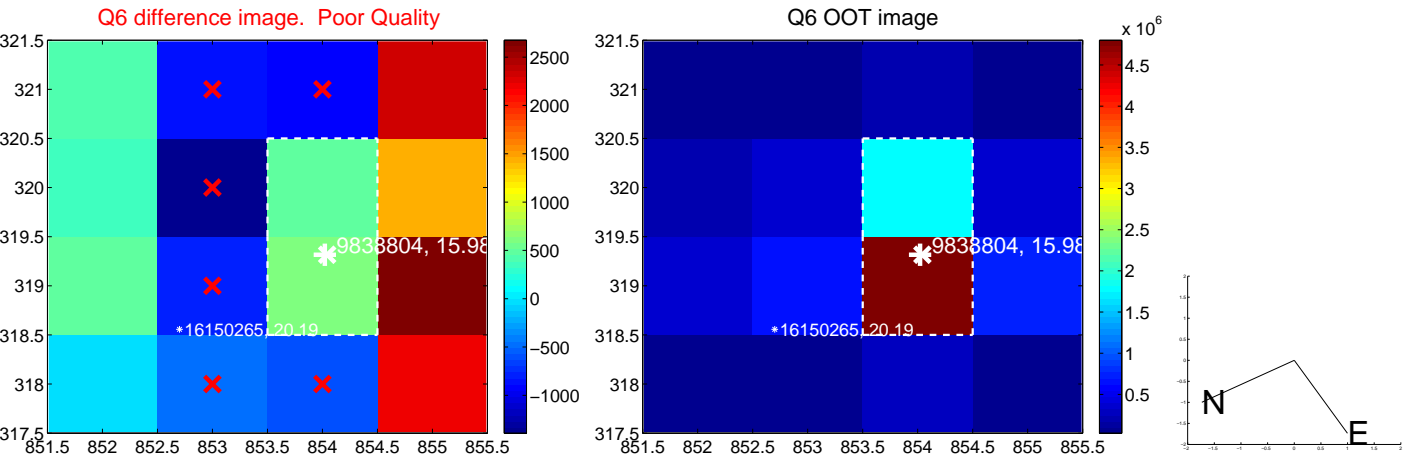
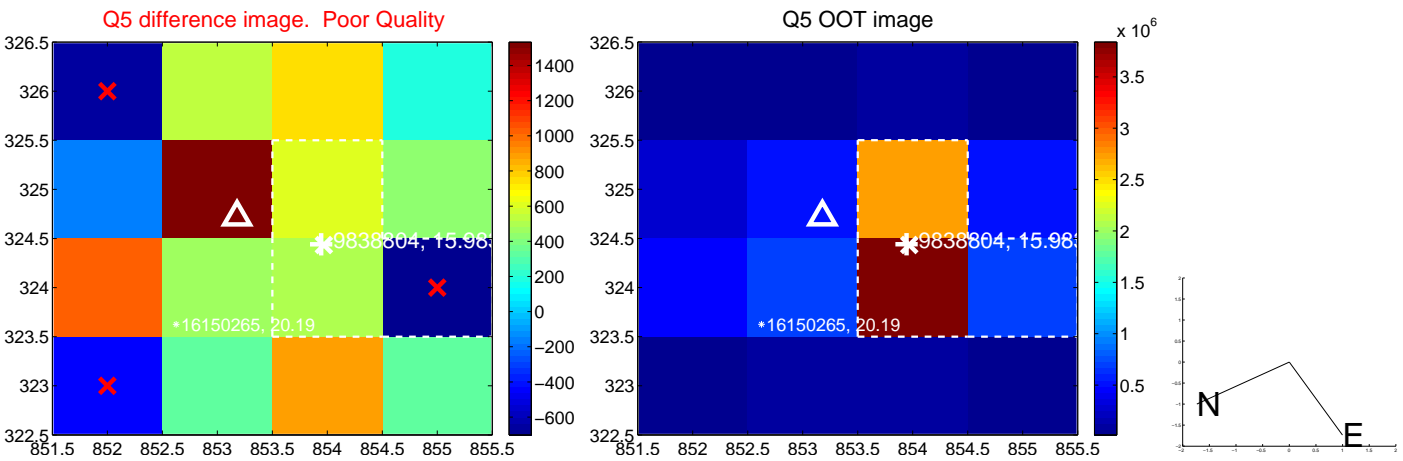


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

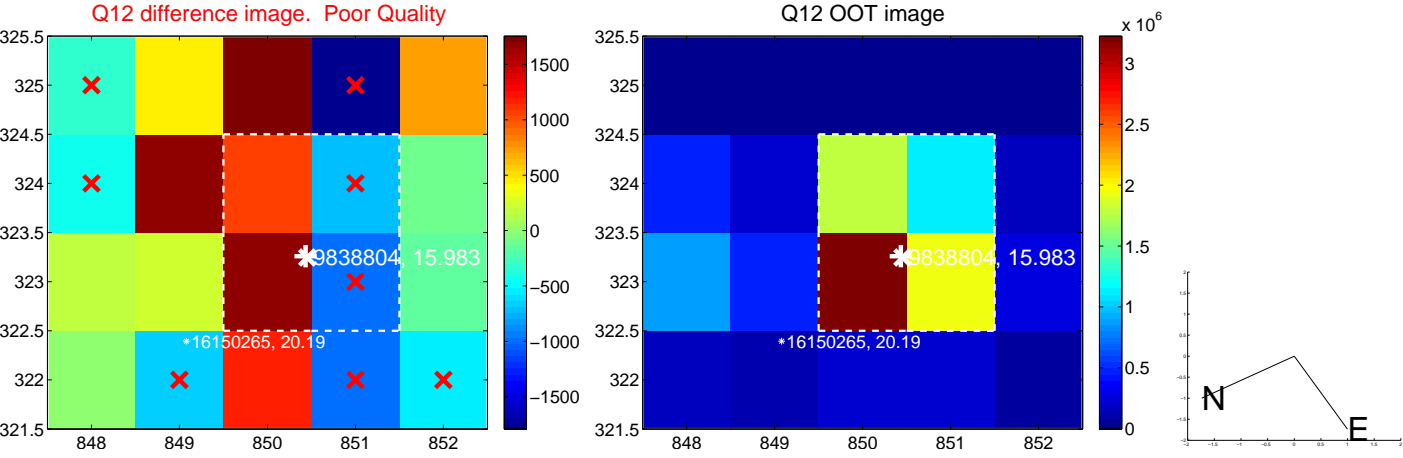
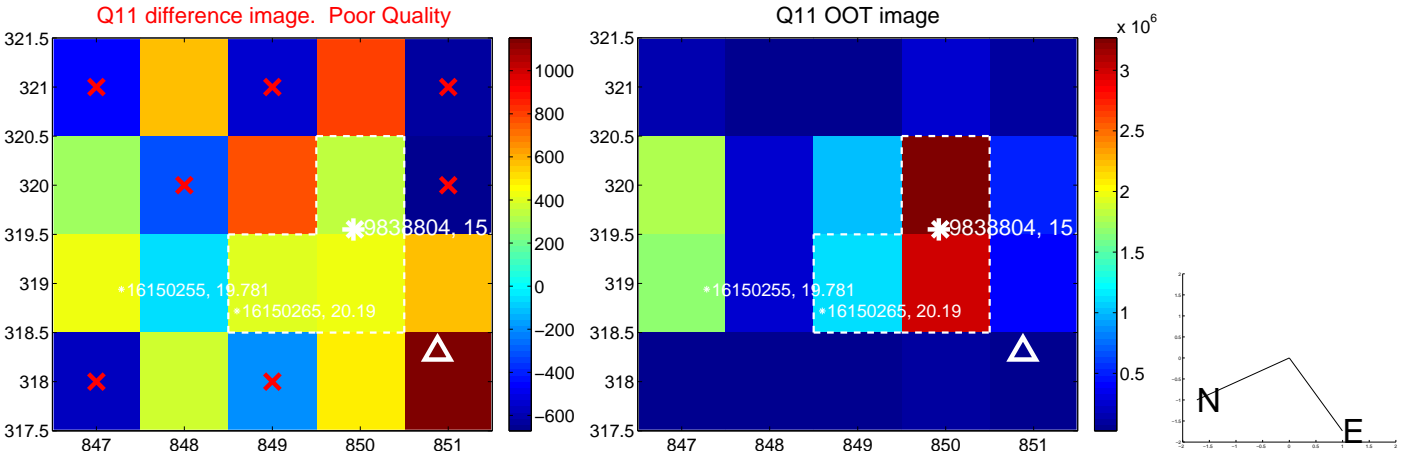
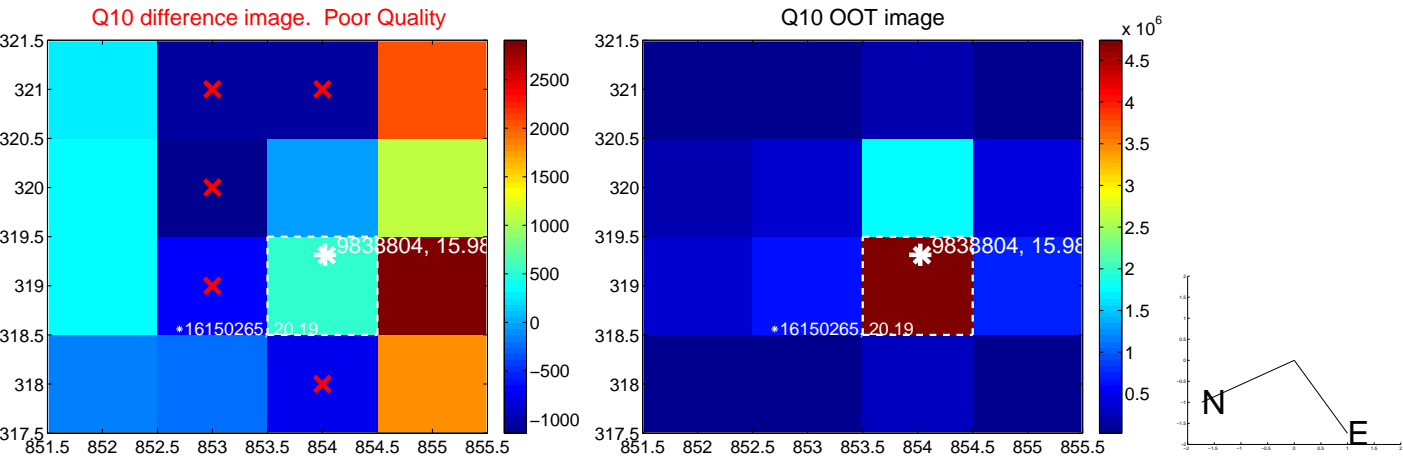
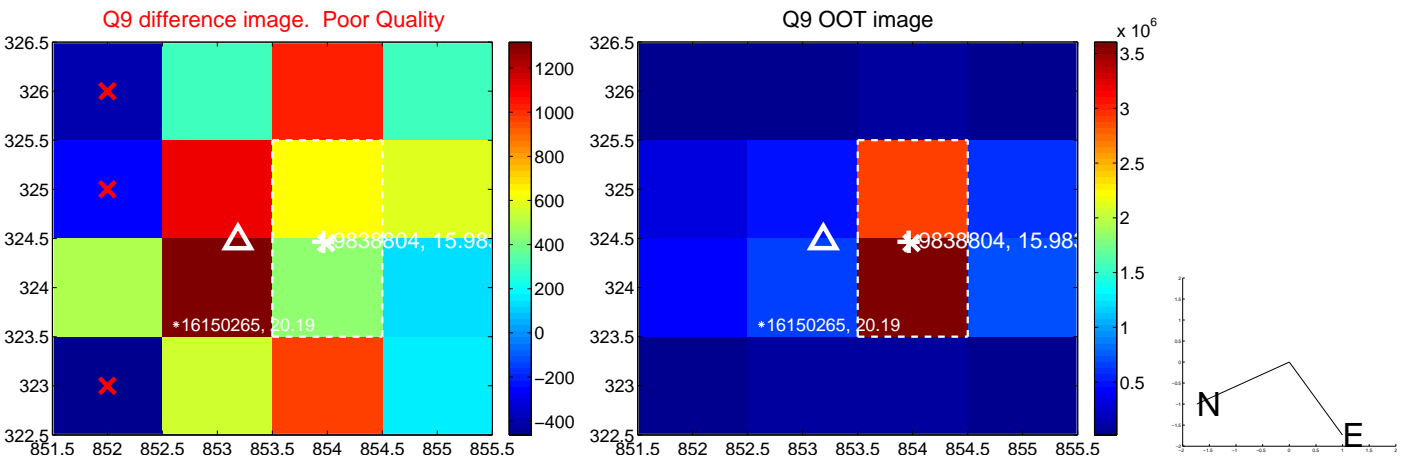
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



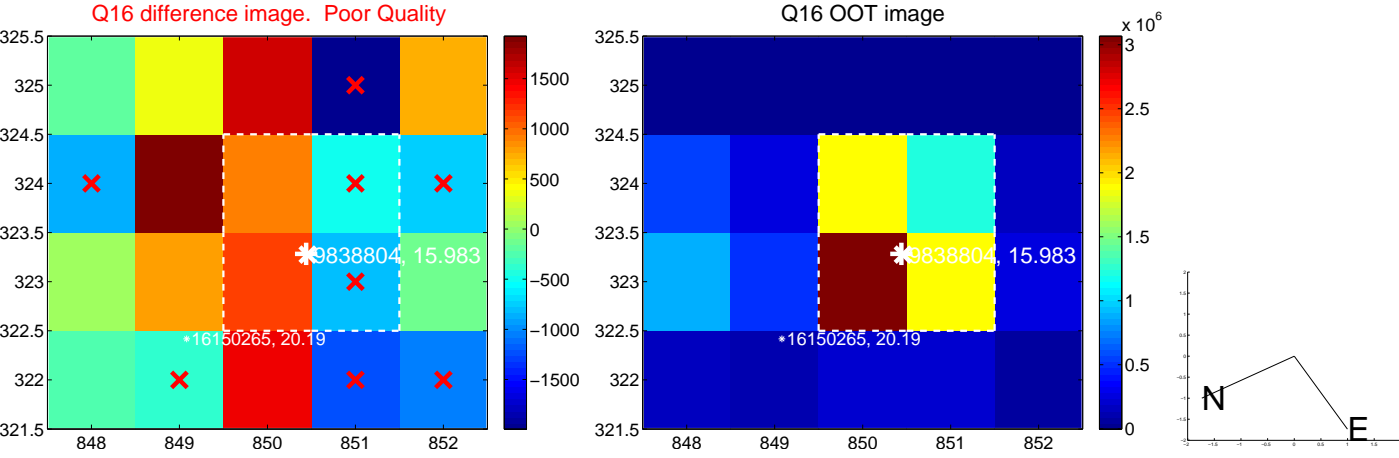
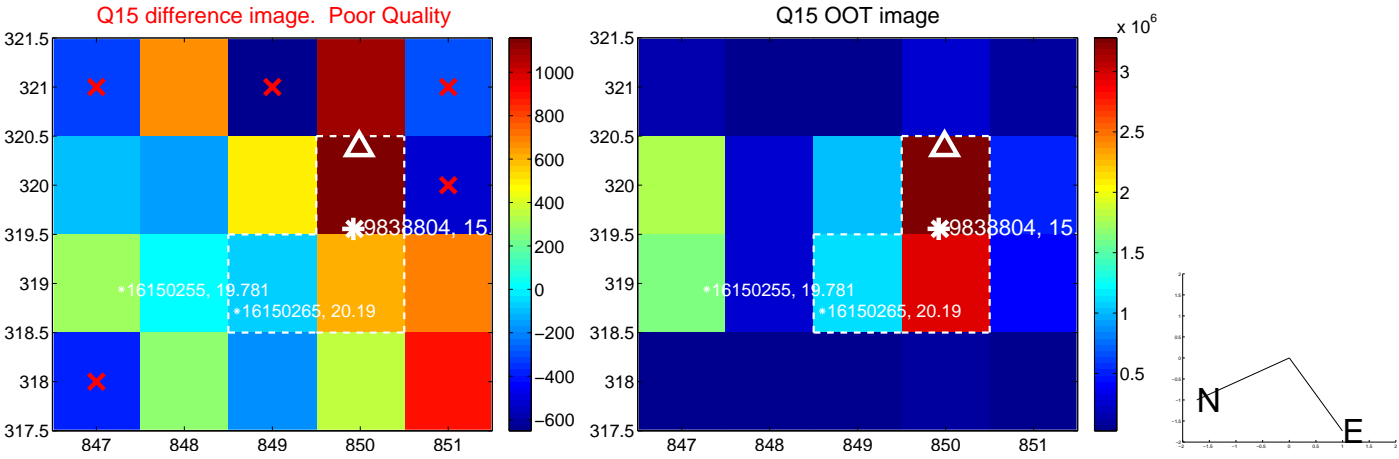
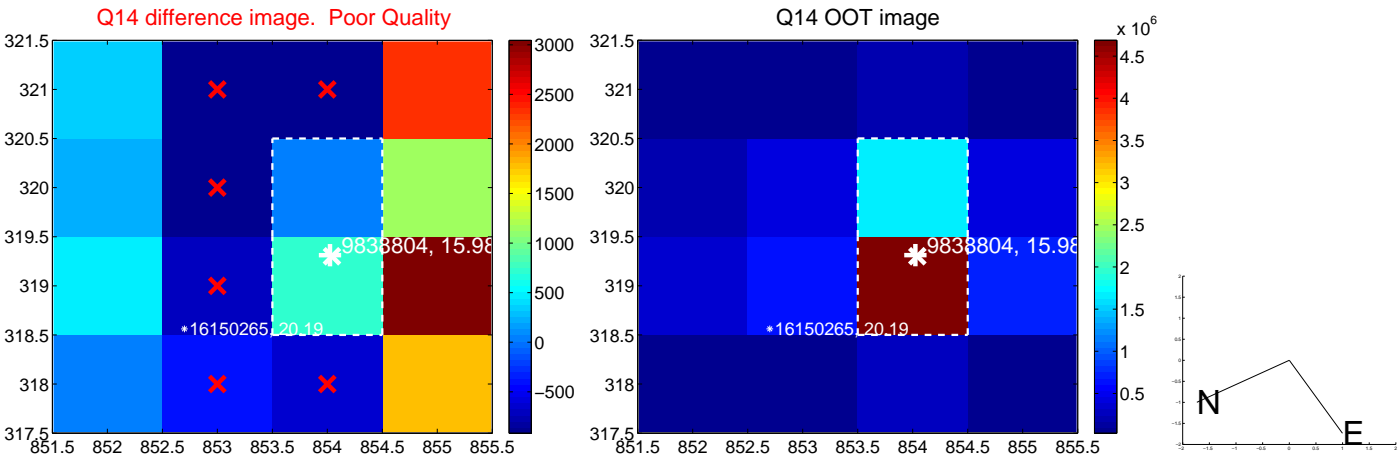
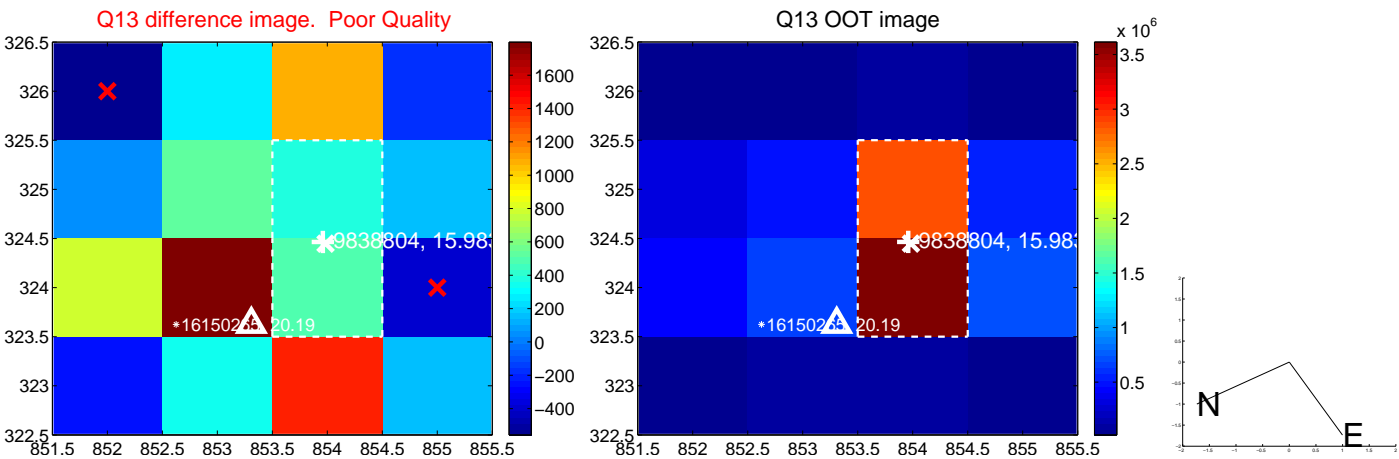
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



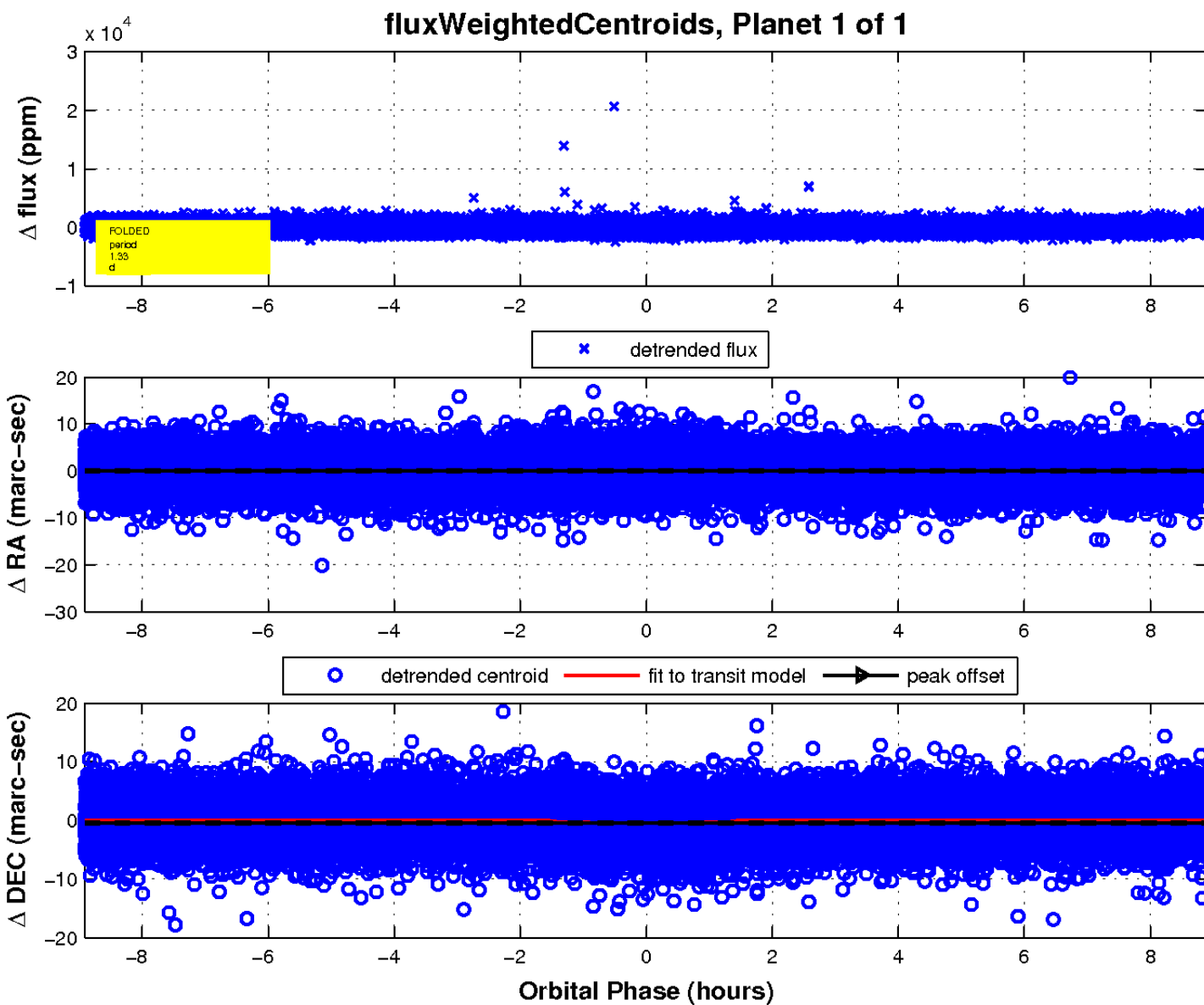
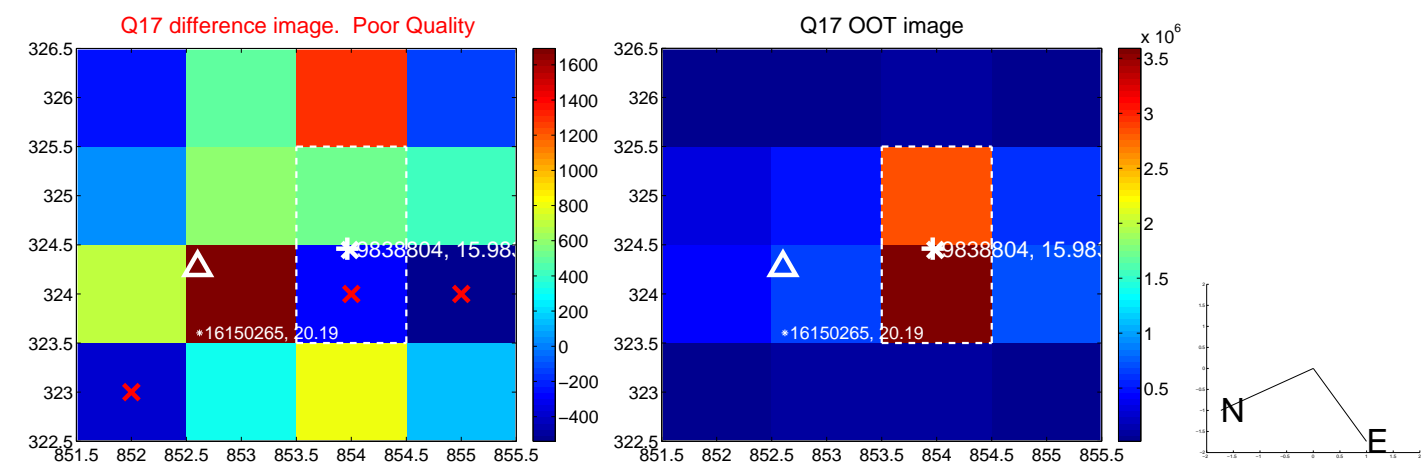
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

